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INTEGRATING AUTHORITY CONTROL IN AN ONLINE CATALOG

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Abstract:
Machine-readable data bases of bibliographic records provide the substance for online catalogs. In order for a data base to be a catalog, however, it must have a logical organization which collocates related items. Authority control imposes this organization. The Ohio State University Libraries began use of LCS (Library Control System) as its official catalog in summer I982. LCS achieves authority control through a headings file, which: 1) serves as an authority file by displaying the verified form of headings used in the catalog and by linking related headings; and 2) organizes and provides access to the data base by serving as an index to the bibliographic records. This system continues the organizational philosophy of the card catalog, enhancing it with the advantages of automation. The machine link between headings files and bibliographic records facilitates change and modification of the headings. This new application of authority control- in LCS illustrates the theory of authority control in online catalogs.

Theory

Machine-readable data bases of bibliographic records provide the substance for online catalogs. The data bases themselves, however, are not catalogs because they do not fulfill the functions of a catalog as formulated by Cutter (1) and reaffirmed in the Paris Principles (2). These functions are to serve as 1) a finding tool for individual items and 2) a gathering tool for items which share common characteristics. The first function can be satisfied by access to the machine-readable records, but the collocating function of the catalog depends on a logical organization of the discrete items.

The organization of the catalog occurs with the consistent use of headings - the access points (e.g.-, personal names, subject terms, series, etc.) of bibliographic records - and a structure of relationships between and among the headings. This consistency and structure are the catalog's strongest points (3). The headings which have been used are recorded in an authority file, which documents forms of headings, verified status, relationships between verified headings and variant forms of these headings ("see" references), and relationships between and among verified headings ("see also" references).

Authority control can be described as a three-part process: 1) collecting, relating, and maintaining authority data, 2) verifying proposed headings against that authority, and 3) using the established authorized headings as access points (4).

Traditionally, authority control has been carried out through the maintenance of an authority file, against which the headings to be used in the catalog are compared. The connection between the card catalog and the authority file is intellectual. A trained individual determines which headings are new and which are variant forms of previously established headings.

This approach has continued in some automated cataloging systems, such as OCLC.

Despite the sharing of cataloging through data bases, each library must perform the manual matching necessary to turn those machine produced cards into a catalog (5). The Library of Congress name authority file, which is available online from OCLC, is a separate file which serves only as a resource, the successful use of which is dependent on human interpretation.

When authority files are machine-readable, the systematic comparison necessary for authority control also can be automated. Computers offer a new capability in authority control by providing an actual link between and among machine-readable files. Linked headings are stored only once in the authority file, and a unique number identifying this location is stored in the bibliographic record. The relationships ("see" and "see also" references) among authority records also can be automatically linked. This prevents the inadvertant use of unauthorized headings and the creation of blind references (i.e., those which have no associated bibliographic records).

Three levels of links can be identified in relationships between machine-readable authority and bibliographic files: 1) the unlinked system, 2) the integrated linked system, and 3) the non-integrated linked system (6). The unlinked system is the traditional approach as used by OCLC. (That is, there are two separate data bases with no links). Both the integrated and non-integrated linked systems specify relationships between bibliographic records and headings. These relationships constitute the links. The integrated linked system controls the entry of new bibliographic records into the data base. Since only records with established headings are allowed, new headings must be authorized online before the record at issue is added to the data base. The integrated linked system is possible only in cataloging systems that provide online authority control at the time the catalog record is created. This option is not available for an online catalog if the library uses an external, shared cataloging system for record preparation. A non-integrated linked system is the solution for these online catalogs. The non-integrated linked system provides machine validation after cataloging is completed by matching headings from new cataloging to headings existing in the automated catalog. A non-integrated linked system can provide catalog management similar to the integrated linked system.

Application

In December 1981, The Ohio State University Libraries created a headings file to provide its Library Control System (LCS) with non-integrated linked authority control. This software upgrade provided the organization which would allow LCS to become the official catalog of the University Libraries, effectively replacing the card catalog. Prior to that time, LCS served primarily as a finding tool for known items. It did not provide for the collocating function with associated references for authors, although it did provide subject access, without references, for a portion of the collection (7).

The new headings file was created by extracting author, subject, uniform title, and series headings from approximately 520,000 MARC compatible records created between January 1974 and November 1981 by The Ohio State University Libraries and the State Library of Ohio (8) using OCLC. Headings also were selected from the author field in the 1.3 million short records present on LCS.

The headings file on LCS gathers similar material by serving as an index to the bibliographic records. When a heading (name, subject, uniform title, or series) is searched, the response displays: that heading in its alphabetical sequence, the number of bibliographic records associated with that heading, as well as "see" references for variant forms of headings. A note refers users to "see also" references.

The LCS headings file functions as an authority file in that each heading record includes the display (authorized) form of the heading, indicates the type of heading (i.e., author, subject, uniform title, or series), specifies the verified status of the heading, gives the series decision for series headings, and records the relationships among heading records. In addition, each heading record includes the unique title numbers of the LCS bibliographic records from which the heading was extracted. Each heading record is assigned a number which replaces the text of the heading in the bibliographic records. The heading record also includes the unique numbers of other heading records which are related. These numbers constitute the links.

The second step of authority control, verifying headings against the authority, takes place through machine validation. A sort form facilitates heading validation by machine. This sort form is created by deleting all punctuation and duplicate blanks, and converting all lower case letters to upper case. When the headings file was produced, the heading records were sequenced using the sort form, and duplicate heading records were combined. The elimination of duplicate heading records reduced the number of headings from the 2.9 million extracted from the bibliographic records to 1.3 million unique headings. (The number of unique headings will be reduced further when the headings are reviewed and variant forms are eliminated.) All headings were -originally assigned an unverified status which is changed to verified as the headings are reviewed by library staff.

This heading validation occurs as new bibliographic records are added to LCS during the weekly maintenance of the data base. A sort form is created for each heading and merged into the headings file. If there is a match with a previously established heading, the number of associated bibliographic records is incremented by one, the title number of the new bibliographic record is added to the heading record, and the heading number replaces the heading text in the bibliographic record. If the heading is unverified, i.e., does not match an existing verified heading, it is reported for manual review, while a new heading record with links is created. If the new heading matches a "see" reference, the bibliographic record is automatically linked to the correct heading. Using weekly reports, library staff establish the correct form of new headings and make any necessary references. They also identify which headings may be variations of established headings and reassign any associated bibliographic records to the correct heading record.

All headings added to LCS are either already established and verified or are reviewed. This provides the same control as the integrated linked system, but the integration takes place after, rather than during, the preparation of the bibliographic record.

Summary

Authority control is a combination of intellectual and record-keeping tasks - collecting and maintaining authority data and verifying proposed headings against that authority - are being automated. The establishment and use of authorized forms, however, is an intellectual activity which requires human review and action. The online authority file records decisions but cannot make those decisions.

Authority files are an important resource to be consulted when creating new bibliographic records. The headings file on LCS is such a resource, but it is also more. The file organizes the machine-readable data base into a catalog by collocating related items via their common headings. At the same time, the file manages the catalog through the machine validation of headings and by providing the links between and among headings and bibliographic records. The links which make automated authority control possible also add a new dimension to authority control in online

catalogs (9). That dimension is the capability to facilitate change. A heading can be changed and that change will then be reflected in all bibliographic records containing that heading. The functions of the catalog have been preserved in LCS at the same time that the inflexibility and unresponsiveness to change, which are the inherent weaknesses of the card catalog, have been overcome.

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